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DIVISION OF MINERALS**

**NEVADA ABANDONED  
MINE LANDS REPORT  
2002**



by

**Bill Durbin - Chief, Abandoned Mine Lands Program**  
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**February 2003**

## **NEVADA COMMISSION ON MINERAL RESOURCES**

### **Division of Minerals**

The Nevada Division of Minerals, a part of the Commission on Mineral Resources, is responsible for administering programs and activities to promote, advance, and protect mining and the development and production of petroleum and geothermal resources in Nevada. The Division's mission is to conduct activities to further the responsible development and production of the State's mineral resources to benefit and promote the welfare of the people of Nevada. The seven-member Commission on Mineral Resources is a public body appointed by the Governor and directs mineral-related policy for the Division and advises the Governor and Legislature on matters relating to mineral resources. The Division focuses its efforts on three main areas: Industry relations and public affairs; regulation of oil, gas, and geothermal drilling activities and well operations; and abandoned mine lands.

The agency is involved in a wide array of activities relating to mineral development. Staff compiles annual data on all active mines in Nevada and maintains the State's mine registry. Information concerning mining operations and production is made available to the public through this yearly publication. Educational documents and materials concerning many aspects of the minerals industry are also produced. The Division participates in governmental activities affecting policies and laws concerning the minerals industry and resource development. The Division administers the State's reclamation bond pool.

The Division is responsible for permitting, inspecting, and monitoring all oil, gas, and geothermal drilling activities on both public and private lands in Nevada. Staff also monitors production of oil, gas, and geothermal resources to insure proper management and conservation. The Administrator is the Governor's Official Representative to the Interstate Oil and Gas Compact Commission.

The Division's abandoned mine lands program provides for public safety by identifying and ranking dangerous conditions at mines that are no longer operating, and by securing dangerous orphaned mine openings. The program continually urges the public to recognize and avoid hazardous abandoned mines.

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## **Executive Summary**

The State of Nevada's Abandoned Mine Lands (AML) program entered its 15<sup>th</sup> year in 2002. Key points for the program in 2002 include the following:

- One fatality and one injury incident related to hazards at abandoned mines were reported to the Nevada Division of Minerals (NDOM) in 2002.
- The total number of AML hazards discovered and ranked since the beginning of the program reached 9,120 hazards. The total number of hazards secured reached 6,771.
- 591 hazards were discovered and ranked in 2002, a 24.0% increase over 2001. This increase was due primarily to the summer intern program.
- 438 hazards were secured in 2002, a 7.5% decrease over 2001. Mining claimants and private property owners secured 134 hazards. 304 orphan hazards (hazards located on public land where no claimant or property owner exists) were secured by NDOM staff and volunteers (a record amount of orphan securings and a 5.9% increase over 2001).
- Public awareness activities included 112 classroom presentations to approximately 4,000 students. Students and teachers were given brochures, bumper stickers, magnets, and pencils bearing the "Stay Out and Stay Alive" message. AML brochures were distributed to every 4<sup>th</sup> and 8<sup>th</sup> grade student in the state, a total of 69,400 brochures, and the "Stay Out and Stay Alive" video was sent to all new schools in the state.
- The Las Vegas AML Backfill Project, which is a cooperative project between the Division, the Bureau of Land Management, the Nevada Mining Association, and Clark County, permanently closed 21 hazards in the Goodsprings District of Clark County in 2002.
- The Association of General Contractors (AGC) in cooperation with the U.S. Forest Service and the Division permanently closed 7 hazards on Peavine Mountain northwest of Reno.
- The Summer Intern Program included 4 students in 2002. The students were from the Mackay School of Mines and the University of Nevada Reno, Engineering Department.
- 35 hazards were secured by 4 Eagle Scout candidates in 2002. Since 1992, 27 Eagle Scout projects have been completed resulting in 170 secured orphan hazards and 11 repairs to existing fences.
- The Division continued its role as the principal facilitator of the state's AML Environmental Task Force. Scopes of work and closure plans were completed for six field projects and work continued on a GIS and a technology AML database, primarily through funding provided by the U.S. Army Corps of Engineers.

- The Division surpassed both of the AML performance indicators approved by the state legislature. Total secured hazards divided by total discovered hazards was 74.2% (70% required) and total public awareness presentations were 13.9 per staff member (12 required).
- Total dedicated funding for the AML program from mining claim filings, fees on permitted surface disturbance associated with new mining operations on public lands, and BLM grants totaled \$238,296 in 2002, as compared with \$282,465 in 2001.

## **Program Background**

Nevada's geology provides ideal conditions for the deposition of a large variety of valuable and useful minerals. These mineral deposits have attracted the attention of miners and prospectors for over 150 years. The hearty souls who searched across the state exploring for this vast mineral wealth left behind a legacy of shafts, adits, glory holes, stopes, mill sites and other features that are potentially dangerous to unwary or curious people and to wild and domestic animals. Over time, most of the mine openings have become unstable because of exposure to the elements and decay of support timbers. It is estimated that 200,000 to 300,000 of these mining-related features exist in the state. Of these, the Division estimates that 50,000 are significant hazards that require some type of securing. Appendix A lists the hazards discovered and hazards secured by the AML program from 1987 through 2002.

The State of Nevada AML program was created by the Nevada Legislature in 1987 in response to a number of incidents, both fatal and nonfatal, that had occurred in abandoned mine openings. Table 1 shows a 31-year history of known incidents related to abandoned mines. The legislation placed the program with the Division of Minerals and mandated two primary functions: 1) Investigation and inventory of mining-related openings and structures at mining sites that are currently idle or abandoned, and 2) Development and maintenance of an aggressive public awareness campaign to educate the public about dangerous conditions that exist as a result of historic mining activities. The primary Nevada Revised Statutes (NRS) governing the AML program can be found in Appendix B.

In 1989, the Nevada Legislature expanded the program to include the responsibility of securing hazardous conditions on open public lands where no claimant or property owner could be identified (so-called "orphan" mine openings). The legislation also provided an opportunity for companies, individuals, and civic groups to voluntarily assist the program in securing orphan mine openings under a designated Good Samaritan law (NRS 41.0331). See Appendix B.

The AML program is administered under Nevada Administrative Code (NAC) 513. The pertinent regulations can be found in Appendix C. Sections 513.320 through 513.360 provide for the openings or structures to be given a hazard ranking based on the location and type of feature. The regulations also require that land ownership status be conducted at the county courthouse to determine whether a current claimant or landowner is responsible for abating hazardous conditions on lands under their control.

**Table 1. Reported AML Incidents through 2002.**

<b>NEVADA DIVISION OF MINERALS Reported Abandoned Mine Lands Incidents</b>		
<b>Date</b>	<b>Incident</b>	<b>County</b>
5/71	Male juvenile (15) injured in fall down 200 ft. deep mine shaft	Carson City
4/75	Two male juveniles killed when motorcycles fall into mine shaft near Searchlight	Clark
12/78	Juvenile killed in fall down mine shaft (Ninety-Nine Mine), body never recovered	Clark
4/79	Two teenagers killed in fall down mine shaft (Oest Mine)	Lyon
9/88	Body of elderly male found at bottom of mine shaft	Lyon
9/89	Male adult seriously injured in fall down internal winze in mine near Henderson	Clark
3/90	Male juvenile lost for 19 hours in mine shaft near Tonopah	Nye/Esmeralda
5/90	Dog killed in mine shaft	Humboldt
2/91	Male adult (40) killed in fall down internal mine winze	Douglas
5/91	Male juvenile (13) injured (minor) in fall down 20 ft. deep mine shaft	Washoe
12/91	Male adult (44) killed in fall down internal mine winze	Lyon
9/92	Female adult (28) injured (cuts and bruises) in fall down mine shaft	Douglas
10/92	Male adult (27) news reporter injured in dynamite blast in mine	Humboldt
11/93	Dog rescued from 30 ft deep mine shaft	Storey
6/95	Male adult (30) killed while scuba diving in mine shaft filled with water	Humboldt
3/96	Male adult (31) injured in fall down internal mine winze on west side of Las Vegas	Clark
9/96	Two male adults (35) killed in mine adit near Virginia City by suffocation	Storey
4/97	Two male adults (50's) injured in fall down hand dug well in town of Luning	Mineral
7/98	Male adult (20's) slightly injured in fall down internal mine winze in Brouher Divide Mine near Tonopah, another adult male lost for 7 hours, total of 6 adult males in mine	Esmeralda
9/98	Dog rescued from 20 ft deep mine shaft	Douglas
10/98	Two male adults seriously injured in fall down 50 ft. deep internal mine winze near Las Vegas	Clark
10/99	Female juvenile (11) killed in fall down 130 ft. deep mine shaft near Beatty	Nye
11/00	Dog rescued from fall down 40 ft. mine shaft. Moderate injury to hip	Storey
12/00	Dog rescued from fall down 60 ft. winze. Minor injury to hip	Pershing
7/02	41 year old male drowned swimming in open pit lake	Storey
10/02	37 year old male received severe injuries from fall down 25 ft. winze	Clark

The AML program is primarily funded by fees on mining claim filings. The county recorder collects the fees for the Division at the time the claims are filed. The program is also funded by a fee paid by mining companies or individuals for new operations or expansions occurring on public lands. In 1995, the Division entered into a cooperative agreement with the Bureau of Land Management (BLM). Under this agreement the BLM has provided a yearly assistance grant to enhance and accelerate both field investigation activities and work performed by staff and volunteers to secure orphan hazards.

In compliance with NRS 513.094.2, the Division notifies county commissions of hazardous conditions discovered in their counties, on an on-going basis by; 1) providing copies of notification letters sent to claimants requesting that hazardous conditions located on their claims or property be secured, and 2) providing documentation of orphan hazards identified and ranked within a week of determination of orphan status.

If a claimant fails to notify the Division of completion or of their intention to secure hazards within 60 days of the date of the notification letter, their file is turned over to the appropriate county commission per NRS 455.030 and 455.040. The county is authorized to take appropriate enforcement action, which may include warnings issued by the county sheriff, securing work performed under direction of the county at the owner's expense, and possible fines of up to \$250 per violation.

### **Abandoned Mine Incidents in 2002**

During 2002, there were two incidents related to abandoned mines that resulted in one death and one serious injury. In July of 2002, a 41-year old Reno resident drowned while swimming in a small pit lake at a reclaimed gold mine near Virginia City in Storey County. In October of 2002, a 37-year old resident of Palo Alto, California, entered a tunnel at a mine site near Goodsprings in Clark County and fell down a 25-foot deep vertical winze. His injuries included a spinal fracture, which has left him a quadriplegic.

### **Discovery and Securing**

From the beginning of the AML program through December 31, 2002, 9,120 hazards have been discovered and ranked and 6,771 hazards (claimed, owned, and orphans combined) have been secured. Table 2 is a county-by-county listing of hazards discovered and secured since the beginning of the program. The number of hazards secured represents 74.2% of all hazards discovered to date.

Of the 6,771 hazards secured, 624 (9.2%) were ranked high, 2,132 (31.5%) were ranked moderate, 3,082 (45.5%) were ranked low, and 933 (13.8%) were ranked minimal. Figure 1 is a pie chart showing the percentage distribution of secured mine openings by hazard rank.

Of the 6,771 hazards secured, 1,937 (27.1%) are orphans and they ranked as follows: 99 (5.1%) high, 497 (25.7%) moderate, 941 (48.6%) low, and 400 (20.6%) minimal. Figure 2 is a pie chart showing the percentage distribution of secured orphan mine openings by hazard rank. The difference between total securings and orphan securings is 4,834, which represent the significant contribution to the program by the mining industry and other individual owners.

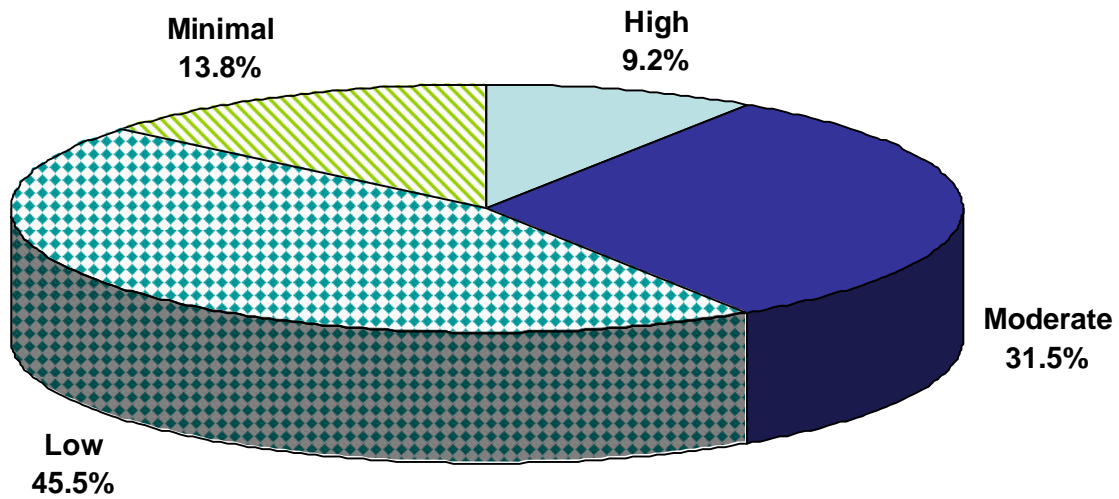
The total number of hazards discovered and ranked during 2002 was 591 and the number secured was 438. This compares with 449 discovered and ranked and 474 secured in 2001. Figure 3 is a graph of hazards discovered and ranked and hazards secured for 1987 through 2002.

**Table 2. County-by-County Hazards Discovered and Secured from 1987 through 2002.**

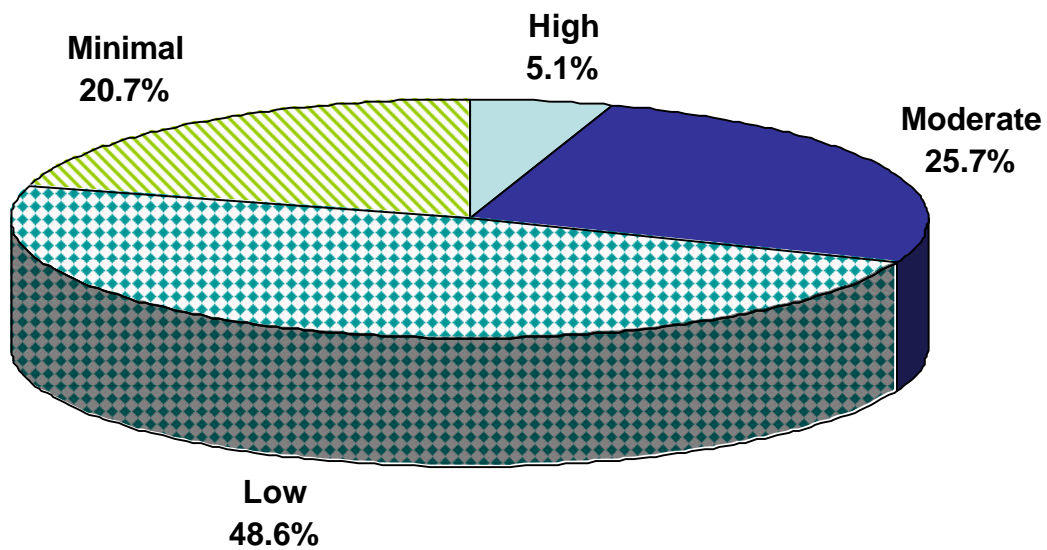
<b>COUNTY</b>	<b>HAZARDS DISCOVERED</b>	<b>HAZARDS SECURED</b>
Carson City	72	69
Churchill	405	260
Clark	1,517	959
Douglas	137	110
Elko	321	231
Esmeralda	1,014	836
Eureka	523	456
Humboldt	437	310
Lander	338	249
Lincoln	313	254
Lyon	711	551
Mineral	915	670
Nye	883	580
Pershing	740	514
Storey	136	118
Washoe	311	291
White Pine	347	313
<b>TOTAL</b>	<b>9,120</b>	<b>6,771</b>

Of the total hazards secured in 2002, 134 hazards were secured by claimants and owners of patented claims and private land, and 304 hazards were orphan mine openings secured by NDOM staff and volunteers. The orphan hazards represent 69.4% of 2002 securings. 235 of the orphans were secured by summer interns and NDOM staff, 35 hazards were secured during four Eagle Scout projects in Clark and Lyon counties, 31 orphans were found already secured when discovered, and 3 previously unsecured orphans were backfilled. In addition, three orphans with badly vandalized fences were re-secured in Clark County by members of the Boulder City Kiwanis organization.

Orphan securing work during calendar year 2002 resulted in the abatement of 6 hazards with a ranking of high (2.0%), 66 with a ranking of moderate (21.7%), 156 with a ranking of low (51.3%), and 76 with a ranking of minimal (25.0%). Figure 4 is a pie chart showing the percentage distribution of secured orphans by hazard rank in 2002.



**Figure 1. Distribution of secured mine openings by hazard rank 1987 through 2002.**



**Figure 2. Distribution of secured orphan mine openings by hazard rank 1987 through 2002.**



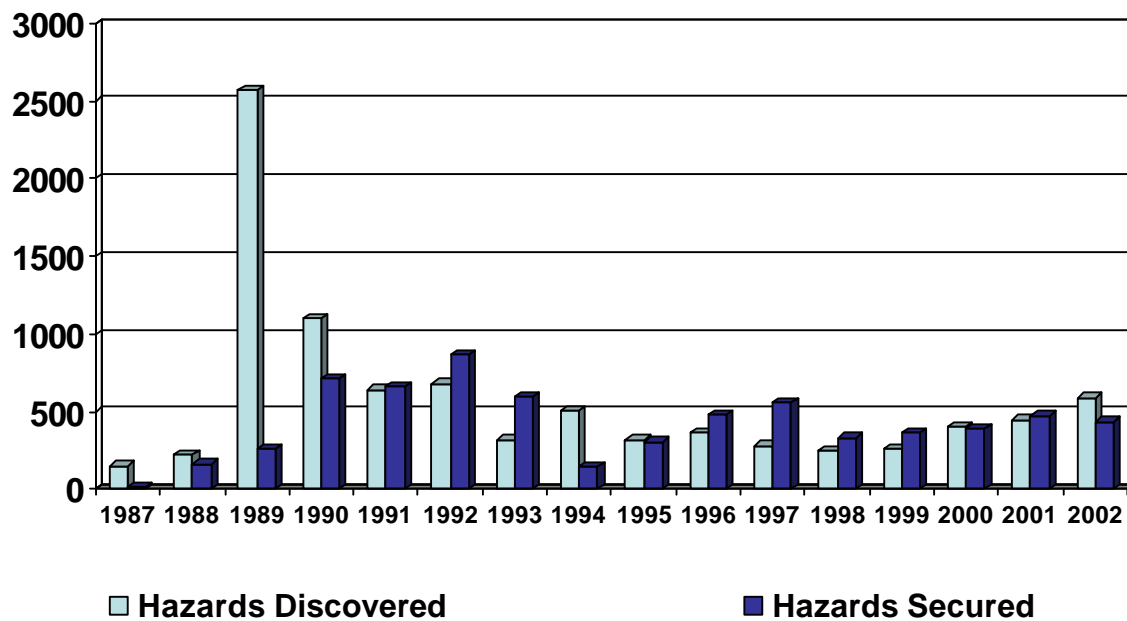


Figure 3. Hazards discovered and hazards secured from 1987 to 2002.

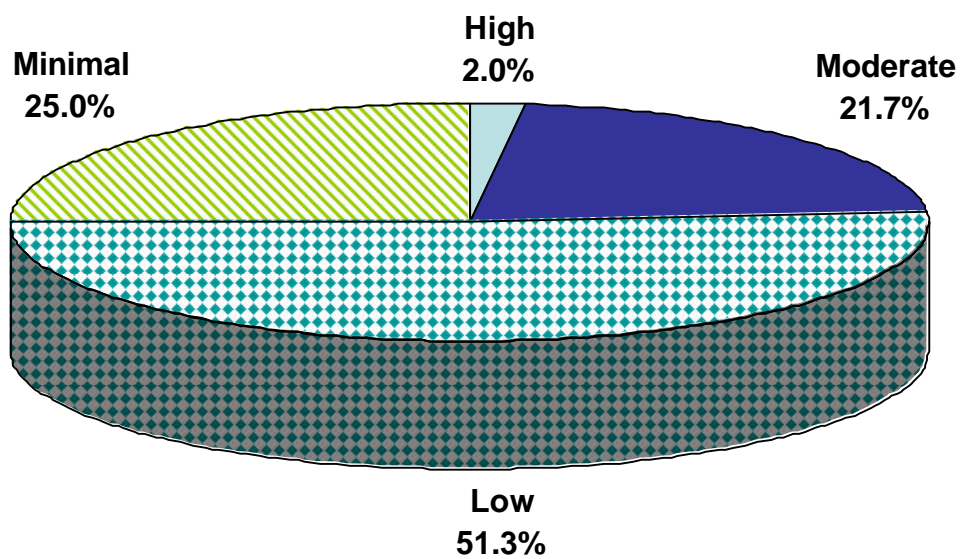


Figure 4. Distribution of secured orphan mine openings by hazard rank 2002.

## **Public Awareness**

In the public awareness arena, the theme is “Stay Out and Stay Alive.” This message is carried to the public through several channels including; an 11- minute video of the same name which has been distributed to every school and library in Nevada, informational brochures, mini-unit curriculum guides targeting 4<sup>th</sup> and 8<sup>th</sup> grade students, TV and radio public service announcements, highway billboards and handouts that include bumper stickers, magnets and pencils. These materials reach tens of thousands of people every year.

In 2002, staff made 112 classroom presentations to approximately 4,000 students in Carson City, Fernley, Gardnerville, Las Vegas, Reno-Sparks, and Silver Springs. Students, teachers, and parent helpers were all given brochures, bumper stickers, magnets, and pencils to use and share with family members and friends. On at least two occasions, NDOM received information from students or parents that led to the discovery and securing of hazards.

The “Stay Out and Stay Alive” message was spread through other venues, as well:

- Presentations made to grade level 4-5 teachers at the annual minerals education workshops in Las Vegas and Elko (total of 32 teachers),
- Presentation to the Gold Searchers of Southern Nevada at a regular monthly meeting (estimated attendance of 120 members),
- Presentations made at workshop sessions at the National Science Teachers Association Annual Conference, San Diego, CA and the Nevada State Science Teachers Association Annual Conference in Ely, NV,
- Presentation to the Carson City BLM Field Office staff (60 employees in attendance),
- Interaction with visitors to the agency display at the Elko Mining Expo and the Northwest Mining Association annual convention,
- Interviews with KLAS TV Channel 8 reporter Shawn Boyd (Las Vegas) and reporter Hali Saylor of the Las Vegas Review-Journal,
- Presentation to the Mackay Club at the University of Nevada, Reno,

Also in 2002, 69,400 brochures were mailed out during January and February to 4<sup>th</sup> and 8<sup>th</sup> grade students in Nevada public and private schools. Mini-unit curriculum guides were sent to all new schools and to all public or private schools that added additional 4<sup>th</sup> or 8<sup>th</sup> grade classes to their schedule. “Stay Out and Stay Alive” videos were sent out to all new schools.

## **Backfill Projects**

### Clark County

In 1999, NDOM, the Nevada Mining Association (NvMA), Bureau of Land Management (BLM) and the Clark County Comprehensive Planning Department jointly developed a program to backfill mine hazards close to residential areas and recreation areas in Clark County. Areas targeted included hazards in the Alunite mining district just south of Henderson, the Goodsprings mining district 30 miles southwest of Las Vegas and the Searchlight and Nelson districts in southern Clark County. Nearly 1,000 hazardous mine openings have been inventoried by the Division in the Goodsprings, Searchlight and Nelson districts alone.

Four Clark County backfill projects have been completed resulting in 62 hazards permanently secured. The first project took place in December of 1999 near Henderson with 6 hazards backfilled. The second project took place in September of 2000 in the vicinity of Henderson and Black Mountain with 13 hazards backfilled. The third project was completed in August of 2001 with 22 hazards backfilled in the Goodsprings area.

The fourth Clark County backfill project was completed in December of 2002. 21 orphan mine hazards were backfilled in the Goodsprings area. 19 of the hazards had been previously fenced or barricaded by NDOM staff, volunteers or former claimants. Staff from Chemical Lime at Apex provided engineering staff and an equipment operator. Cashman Equipment provided the heavy equipment, transportation, and fuel. NvMA and its member companies provided funding for the backfill work. The backfill material was the waste rock that originally came from each mine opening. Figure 5 is a photograph of work performed during the 2002 Clark County backfill project.

The process of obtaining cultural and biological resource clearances for the mine backfill projects has been time-consuming. During the scoping of hazards for the 1999-2001 backfill projects, contractors were hired to conduct cultural resource and biological (tortoise, bat, other wildlife and plant) surveys, the costs of which were borne by NvMA. For the 2002 backfill project, the Las Vegas BLM Field Office conducted the cultural resource and wildlife surveys (not including bats) for 44 orphan mine hazards recommended for backfill by the Division. Ten of the 44 hazards, located at the Lookout Mine, were eliminated for backfilling due to possible nomination into the National Registry of Historic Sites. In the area of wildlife issues, one of the primary concerns in Clark County is the desert tortoise. Under U.S. Fish and Wildlife Service guidelines, and specifications of the Clark County Multiple Species Habitat Conservation Plan, projects requiring the use of heavy equipment are severely limited in the amount of new disturbance they may create in potential desert tortoise habitat. For purposes of this project, the new disturbance limit was set at 5 acres. To minimize new disturbance, 6 of the remaining 34 hazards, located away from existing roads or on hillsides, were eliminated for backfilling and were secured by conventional fence-barricade-warning sign configurations. The Division hired biologist Rick Sherwin of the University of New Mexico, to conduct bat surveys for 34 hazards. His investigations resulted in the elimination of 7 hazards from backfill consideration due to the presence of bats or guano accumulations that indicated occasional use by bats. These hazards have been secured by conventional fence-barricade-warning sign configurations pending future construction of “bat-gates” by BLM. The time involved in completing the fourth Clark County backfill project from the first discussion and planning meeting through the final “bucket of rock” was just under seven months. It is anticipated that the process will become more streamlined as the program evolves.

Additional backfill projects are in the planning stages for 2003 and include proposals to backfill approximately 60 orphan hazards in the Searchlight and Nelson areas of Clark County and 12 hazards in the Tonopah area in Nye and Esmeralda counties.

## Washoe County

The U.S. Forest Service (USFS), NDOM and the Northern Nevada Chapter of the Association of General Contractors (AGC) jointly participated in a project to backfill mine openings on Peavine Mountain northwest of Reno in Washoe County in 2002. Peavine Mountain is a very scenic location within the Washoe County Urban Interface and receives heavy recreational use by a wide variety of people.

Eight hazards were studied for the backfill project. The USFS coordinated cultural and biological (plant and non-bat wildlife) resource surveys. Brown-Berry Biological Consultants were hired by the USFS to conduct bat surveys. One of the eight hazards had significant evidence of bat habitation and was eliminated from backfill consideration. The USFS plans to install a “bat-gate” at that location. The hazard is currently secured by a T-post and barbed wire barricade with a warning sign. The remaining seven hazards were backfilled in October of 2002. Figure 6 is a photograph of backfill work being performed on Peavine Mountain.

The AGC member companies who took part in this project donated their equipment, operators, engineering support, fuel and tractor/trailer rigs for equipment transport. The participating companies were: A & K Earth Movers, Inc., Q & D Construction, Inc., T.W. Construction Co. Inc., and W.E.S. Construction Co. Inc. AGC members have indicated a willingness to participate in future backfill projects and NDOM is currently investigating additional hazards in the Reno area for consideration.

## **Summer Intern Program**

The Division completed its third summer intern program in 2002. Four students from the Mackay School of Mines and the University of Nevada College of Engineering were hired. The four students were Ryan Hoerth, Nick Keller, Mike Sellwood, and Scott Smith, and the Division appreciates the good work they performed during the 11 weeks of the program. This program helps to advance the AML program, and provides the students with valuable field experience in map reading, data collection, land status research, and geological investigation. Figure 7 is a chart illustrating the monthly hazard discovery and orphan securing efforts made during 2002. It is very clear the interns’ presence during the May-August time frame had a marked positive impact on the program.

## **Eagle Scout Projects**

In 1992, a young Eagle Scout candidate presented NDOM with a proposal to secure mine openings for his Eagle Service project. This volunteer effort was very successful and has led to many other projects throughout Nevada. Through 2002, 27 Eagle Scout projects have been completed resulting in 170 orphan hazards secured and 11 previously secured hazards re-built or restored in Carson City, Clark, Douglas, Lyon, and Washoe Counties. Figure 8 shows an Eagle Scout project in Lyon County. Appendix D lists the accomplishments of the Eagle Scouts in the AML program.



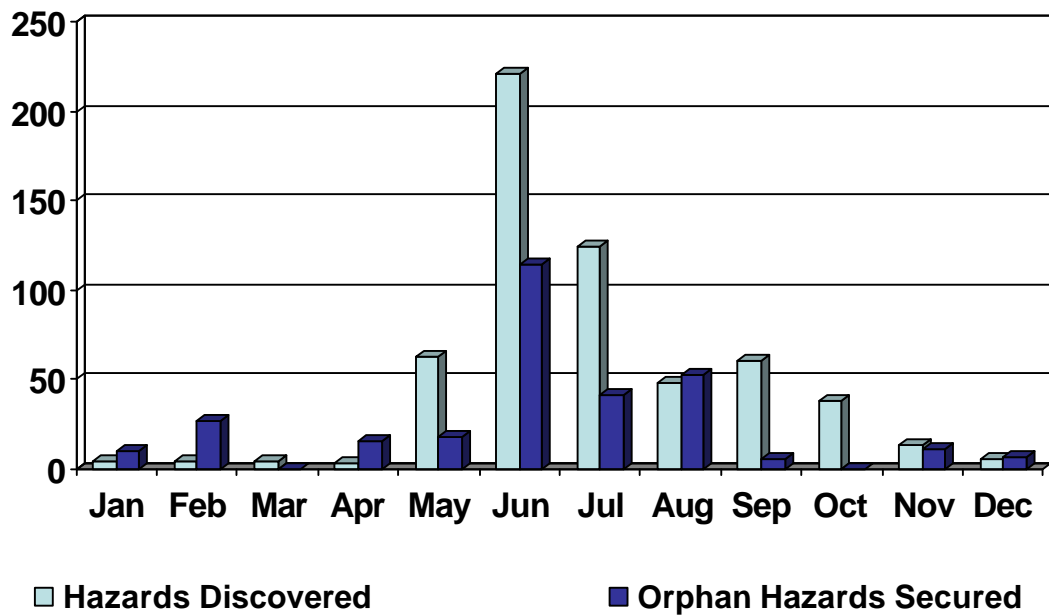


**Figure 5. Goodsprings Backfill Project in Clark County.**



**Figure 6. Peavine Mountain Backfill Project near Reno in Washoe County.**





**Figure 7. Hazards discovered and orphan hazards secured 2002.**



**Figure 8. Lyon County Eagle Scout securing project.**

## **Nevada AML Environmental Task Force**

In March of 1999 the BLM initiated the formation of a Nevada Abandoned Mine Land Environmental Task Force to begin the remediation of environmental problems associated with abandoned and inactive mines in Nevada. The task force is comprised of 13 federal and state agencies in order to foster regulatory cooperation, identify priority sites for cleanup, and provide administrative oversight for funded projects. The Division has been designated as lead coordinator in this effort.

In 2001 the U.S. Army Corps of Engineers was directed by Congress to redirect up to \$5 million dollars of previously appropriated funds into their Restoration of Abandoned Mine Sites (RAMS) program. \$2 million of the \$5 million was earmarked for work in Nevada to support the development of closure plans, and small, innovative, on the ground demonstration projects related to abandoned mine cleanup. Six field projects are currently underway utilizing the USACE funding. These sites are the Rip Van Winkle Mine in Elko County, the Golden Butte Mine and Easy Junior Mine in White Pine County, the Elder Creek Mine in Lander County, the Perry Canyon Mine in Washoe County, and the Veta Grande Mine in Douglas County. Additionally, two database projects have been initiated utilizing funding from RAMS. One is an AML technology database and the other is an AML GIS database.

## **Performance Measures**

The Legislature requires state agencies to have performance measures in place for all of their major programs. For the AML program the Division has two performance indicators: 1) maintain the number of secured hazardous mine openings to the number of hazardous mine openings identified, logged and ranked at a minimum of 70%, (74.2% in 2002) and 2) maintain the number of public awareness and education presentations concerning the Nevada mineral industry and abandoned mines per staff member at a minimum of 12 per year (13.9 in 2002). The Division has consistently surpassed these goals for the past four years.

## **Funding**

The Division's AML program is funded by three major revenue sources: 1) mining claim fees, 2) surface disturbance fees paid on new mining plans of operations on public lands, and 3) grants from the Bureau of Land Management. As of July 16, 2001, \$1.50 of every mining claim filing collected by the county on behalf of the Division is dedicated to the AML program (NAC 513.315). The Division collects a one-time fee of \$20 per acre for every acre of permitted disturbance associated with new mining operations on public lands. The Division has an assistance agreement with the Bureau of Land Management, which provides for a yearly grant, depending on available funding. Table 3 shows the revenues received by the Division from these three revenue sources for the years 1998 through 2002.

**Table 3. Revenue to the AML program for the years 1998 through 2002.**

Year	BLM Grants	Mining Claim Fees	Disturbance Fee	Total
1998	\$ 60,000	\$ 136,514	\$ 66,812	\$ 263,326
1999	*a \$ 100,000	\$ 125,985	\$ 106,380	\$ 332,365
2000	\$ 40,000	\$ 113,430	\$ 20,160	\$ 173,590
2001	\$ 120,000	\$ 140,635	\$ 21,830	\$ 282,465
2002	\$ 60,000	\$ 140,856	\$ 37,440	\$ 238,296

\*a = includes \$30,000 Urban Interface grant and \$70,000 AML Environmental Task Force grant

AML revenue is used to pay salary expenses, travel expenses, the summer intern program, vehicle expenses, and field supplies such as fence posts, signs, and barbed wire. The revenue is also used to support the AML public awareness program through school presentations, video distributions, brochures, magnets, pencils, and other means of outreach.

### **Summary**

The Nevada Division of Minerals' Abandoned Mine Lands program continues to make good progress in the discovery and securing of abandoned mine hazards across Nevada. The total number of hazards discovered increased in 2002 and the number of securings remained at a level well above the historical average. This is despite the fact that much of the remaining work is located in the more remote, less accessible areas of the state. The combined help of the Nevada mining industry, the federal land management agencies, the summer intern program, and many volunteers have greatly enhanced the efforts of the NDOM staff.

The public awareness program reached over 7,000 people directly in 2002 through personal interaction with students, teachers, parents and members of civic groups and organizations and the media. Thousands of other people may have been impacted through a "Stay Out and Stay Alive" public service announcement on television or reading an AML brochure brought home by a student.

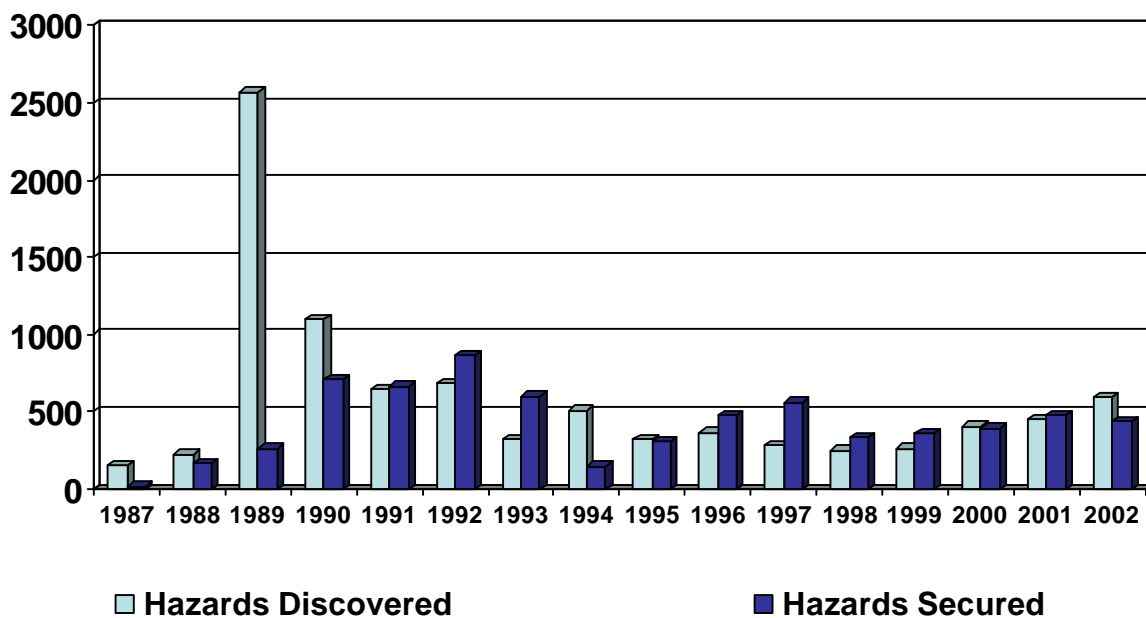
Despite Nevada's tremendous population growth and the growing number of visitors that recreate in Nevada, there has been no significant increase in the number of injuries or fatalities related to abandoned mine hazards. It is the sincere hope of the NDOM staff that the mine backfill efforts, fences, barricades and signs, and the awareness brought to people through the "Stay Out and Stay Alive" message are factors that contribute to keeping the incident rate as low as possible.

The Commission on Mineral Resources and the Nevada Division of Minerals will continue to aggressively support the AML program through fieldwork and public awareness because the only satisfactory number of abandoned mine injuries or fatalities is **ZERO!!**



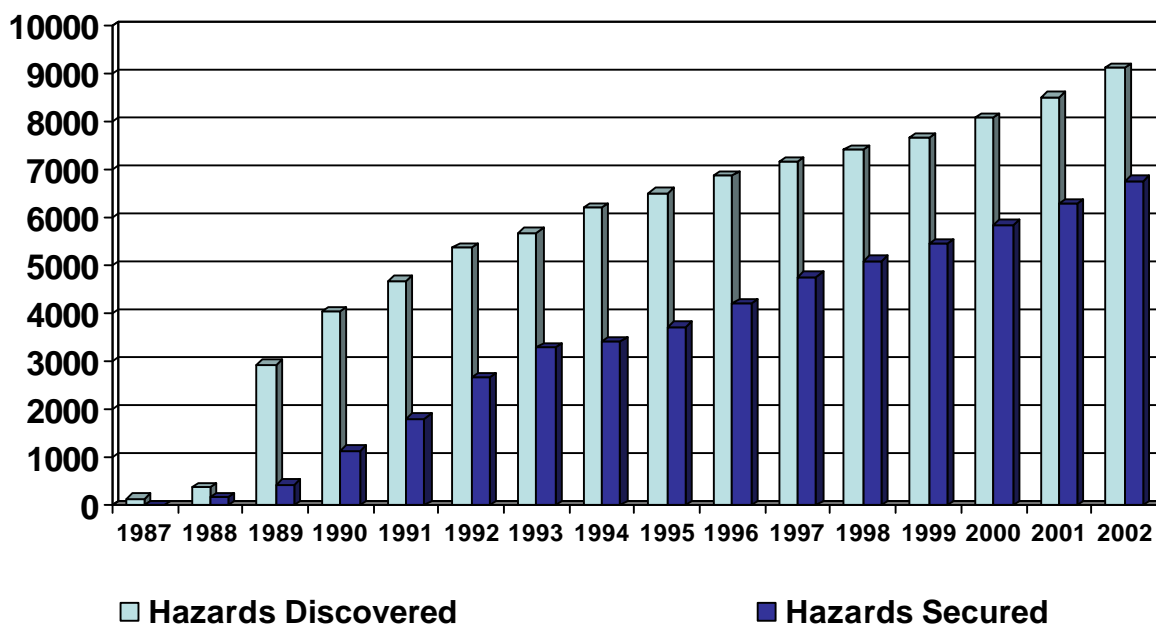
**Appendix A. Hazards Discovered and Hazards Secured from 1987 through 2002.**

<b>Year</b>	<b>Hazards Discovered</b>	<b>Cumulative Hazards Discovered</b>	<b>Orphan Hazards Secured</b>	<b>Non-Orphan Hazards Secured</b>	<b>Hazards Secured</b>	<b>Cumulative Hazards Secured</b>
1987	153	153	0	16	16	16
1988	223	376	13	153	166	182
1989	2,569	2,945	28	235	263	445
1990	1,099	4,044	79	631	710	1,155
1991	642	4,686	66	598	664	1,819
1992	683	5,369	46	819	865	2,684
1993	319	5,688	87	513	600	3,284
1994	510	6,198	36	109	145	3,429
1995	318	6,516	162	144	306	3,735
1996	365	6,881	209	269	478	4,213
1997	282	7,163	168	391	559	4,772
1998	248	7,411	93	239	332	5,104
1999	261	7,672	91	271	362	5,466
2000	404	8,076	238	154	392	5,858
2001	449	8,525	286	188	474	6,332
2002	591	9,120	304	134	438	6,771

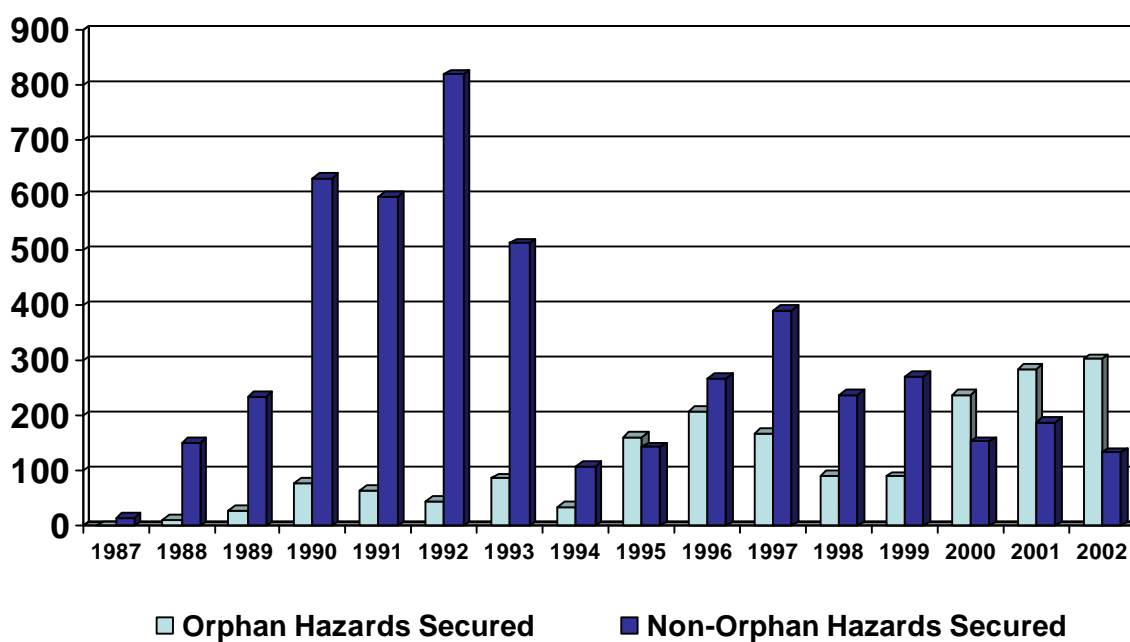


**Hazards Discovered and Hazards Secured from 1987 to 2002.**

Appendix A (continued)



Cumulative Hazards Discovered and Secured 1987 through 2002.



Orphan and Non-Orphan Hazards Secured 1987 through 2002

## **Appendix B. Nevada Revised Statutes (NRS) pertinent to the AML Program**

NRS 455.030 Board of county commissioners to transmit information concerning dangerous condition at mine no longer operating to sheriff or constable; service of notice upon owner or responsible person.

1. If a board of county commissioners receives information from the division of minerals of the commission on mineral resources that there is in the county a dangerous condition that results from mining practices which took place at a mine that is no longer operating, if the information identifies a person responsible for the condition, the board shall transmit this information to the sheriff or the constable of the township where the condition exists.
2. Upon receipt of information pursuant to subsection 1 or upon the filing of the notice, as provided for in NRS 455.020, the sheriff or constable shall serve a notice, in the same manner and form as a summons, upon each person identified as owner or otherwise responsible.

[3:16:1866; B §§ 111; BH §§ 292; C §§ 273; RL §§ 3235; NCL §§ 5632]—(NRS A 1983, 905; 1987, 1869; 1993, 1625; 1999, 3624)

NRS 455.040 Contents of notice; judgment; criminal penalty.

1. The notice served pursuant to subsection 2 of NRS 455.030 must require the person or persons to appear before the justice of the peace of the township where the hole, excavation, shaft or other condition exists, or any municipal judge who may be acting in his place, at a time to be stated therein, not less than 3 days nor more than 10 days from the service of the notice, and show, to the satisfaction of the court, that the provisions of NRS 455.010 to 455.180, inclusive, or the standards established by the commission on mineral resources for the abatement of dangerous conditions have been complied with, or if he or they fail to appear, judgment will be entered against him or them for double the amount required to abate the condition.
2. All proceedings had therein must be as prescribed by law in civil cases.
3. Such persons, in addition to any judgment that may be rendered against them, are liable and subject to a fine not exceeding the sum of \$250 for each violation of the provisions of NRS 455.010 to 455.180, inclusive, which judgments and fines must be adjudged and collected as provided for by law.

[4:16:1866; B § 112; BH § 293; C § 274; RL § 3236; NCL § 5633]—(NRS A 1979, 1476; 1987, 1869; 1993, 881)

NRS 513.094 Additional fee; administrator to establish program to discover dangerous conditions of nonoperating mines; employment of qualified assistant; regulations.

1. An additional fee, in an amount established pursuant to subsection 4, is imposed upon all filings to which NRS 517.185 applies. Each county recorder shall collect and pay over the additional fee, and the additional fee must be deposited in the same manner as provided in that section.
2. The administrator shall, within the limits of the money provided by this fee, establish a program to discover dangerous conditions that result from mining practices which took place at a mine that is no longer operating, identify if feasible the owner or other person responsible for the condition, and rank the conditions found in descending order of danger. The administrator shall annually during the month of January, or more often if the danger discovered warrants, inform each board of county commissioners concerning the dangerous conditions found in the respective counties, including their degree of danger relative to one another and to those conditions found in the state as a whole. In addition, the administrator shall work to educate the public to recognize and avoid those hazards resulting from mining practices which took place at a mine that is no longer operating.
3. To carry out this program and these duties, the administrator shall employ a qualified assistant, who must be in the unclassified service of the state and whose position is in addition to the unclassified positions otherwise authorized in the division by statute.
4. The commission shall establish by regulation:
  - (a) The fee required pursuant to subsection 1, in an amount not to exceed \$4 per claim.
  - (b) Standards for determining the conditions created by the abandonment of a former mine or its associated works that constitute a danger to persons or animals and for determining the relative degree of danger. A condition whose existence violates a federal or state statute or regulation intended to protect public health or safety is a danger because of that violation.
  - (c) Standards for abating the kinds of dangers usually found, including, but not limited to, standards for excluding persons and animals from dangerous open excavations.

(Added to NRS by 1987, 1867; A 1993, 298, 1683; 1995, 579; 1999, 890, 3627; 2001, 66)

NRS 519A.250 Operator to provide division of minerals copy of filing of plan of operation or amended plan of operation; fee; refunds; use of money collected; division to file report with governor and legislature.

1. An operator who is required by federal law to file a plan of operation or an amended plan of operation with the United States Bureau of Land Management or the United States Forest Service for operations relating to mining or exploration on public land administered by a federal agency, shall, not later than 30 days after the approval of the plan or amended plan, provide the division of minerals of the commission on mineral resources with a copy of the filing and pay to the division of minerals a fee in an amount established pursuant to subsection 5 for each acre or part of an acre of land to be disturbed by mining included in the plan or incremental acres to be disturbed pursuant to an amended plan.

2. The division of minerals shall adopt by regulation a method of refunding a portion of the fee required by this section if a plan of operation is amended to reduce the number of acres or part of an acre to be disturbed pursuant to the amended plan. The refund must be based on the reduced number of acres or part of an acre to be disturbed.

3. All money received by the division of minerals pursuant to subsection 1 must be accounted for separately and used by the division of minerals to create and administer programs for:

(a) The abatement of hazardous conditions existing at abandoned mine sites which have been identified and ranked pursuant to the degree of hazard established by regulations adopted by the division of minerals; and

(b) The education of the members of the general public concerning the dangers of the hazardous conditions described in paragraph (a).

All interest and income earned on the money in the account, after deducting applicable charges, must be deposited in the account for the division of minerals created pursuant to NRS 513.103.

4. On or before February 1 of each odd-numbered year, the division of minerals shall file a report with the governor and the legislature describing its activities, total revenues and expenditures pursuant to this section.

5. The commission on mineral resources shall, by regulation, establish the fee required pursuant to subsection 1 in an amount not to exceed \$30 per acre.

(Added to NRS by 1989, 1286; A 1989, 2063; 1991, 1780; 1993, 210, 211, 1687; 1995, 511; 1999, 891, 3631; 2001, 66)

NRS 41.0331 Construction of fence or other safeguard around dangerous condition at abandoned mine. A person, the State of Nevada, any political subdivision of the state, any agency of the state or any agency of its political subdivisions is immune from civil liability for damages sustained as a result of any act or omission by him or it in constructing, or causing to be constructed, pursuant to standards prescribed by the commission on mineral resources, a fence or other safeguard around an excavation, shaft, hole or other dangerous condition at an abandoned mine for which the person, state, political subdivision or agency is not otherwise responsible.

(Added to NRS by 1989, 1556)

## **Appendix C. Nevada Administrative Code (NAC) pertinent to the AML Program**

### **DANGEROUS CONDITIONS CREATED BY ABANDONMENT OF MINES**

NAC 513.200 Definitions. (NRS 513.094) As used in NAC 513.200 to 513.390, inclusive, unless the context otherwise requires, the words and terms defined in NAC 513.205 to 513.290, inclusive, have the meanings ascribed to them in those sections.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88; A by R069 -99, 8-19-99)

NAC 513.205 “Administrator” defined. “Administrator” means the administrator of the division.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88) (Substituted in revision for NAC 513.250)

NAC 513.210 “Animal” defined. “Animal” means any member of the bovine, equine, porcine or caprine species as well as dogs, cats or other animals under the restraint or control of a person.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.220 “Commission” defined. “Commission” means the commission on mineral resources.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.230 “Dangerous condition” defined. “Dangerous condition” means a condition resulting from mining practices which took place at a mine that is no longer operating or its associated works that could reasonably be expected to cause substantial physical harm to persons or animals.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.240 “Division” defined. “Division” means the division of minerals of the commission on mineral resources.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.260 “Fence” defined. “Fence” has the meaning ascribed to it in subsection 5 of NRS 207.200.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.270 “Owner” defined. “Owner” means the owner of real property who is shown to be the owner on records located in the courthouse of the county in which the real property is located.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.280 “Person” defined. “Person” means a natural person.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.290 “Responsible person” defined. “Responsible person” means the owner of a patented claim or the claimant of an unpatented claim.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.300 Scope. The provisions of NAC 513.200 to 513.390, inclusive, apply to all owners or other responsible persons for dangerous conditions on private or public land.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.310 Waiver of provisions. Upon the approval of the administrator, the division may grant a waiver from any provision of NAC 513.200 to 513.390, inclusive, if the waiver does not defeat the purpose of NRS 513.094.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.315 Additional fee. (NRS 513.094) The amount of the additional fee that is imposed on filings pursuant to subsection 1 of NRS 513.094 is \$1 per claim.

(Added to NAC by Commission on Mineral Resources by R069 -99, eff. 8-19-99)

NAC 513.320 Assignment of points to dangerous condition. The administrator or his representative shall assign a dangerous condition one to five points for the location of the condition and an additional one to five points for the degree of danger associated with the condition. The condition must then be ranked according to the total number of points for location and degree of danger.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.330 Rating of location. The location of a dangerous condition must be rated in the following manner:

1. One point must be assigned to a dangerous condition located at least 5 miles from an occupied structure or a public road maintained by some governmental entity.
2. Two points must be assigned to a dangerous condition located between 1 and 5 miles from an occupied structure or a public road maintained by some governmental entity.
3. Three points must be assigned to a dangerous condition located  $\frac{1}{2}$  to 1 mile, inclusive, from a town.
4. Four points must be assigned to a dangerous condition located not more than  $\frac{1}{2}$  mile from a town or not more than 1 mile from an occupied structure or a public road maintained by some governmental entity.
5. Five points must be assigned to a dangerous condition located within a town or within 100 feet of an occupied structure or a public road maintained by some governmental entity.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.340 Rating of degree of danger. The degree of danger for a dangerous condition must be rated in the following manner:

1. One point must be assigned to a dangerous condition consisting of:
  - (a) A vertical or near vertical hole 8 to 20 feet, inclusive, in depth and highly visible upon approach;
  - (b) An inclined hole less than 50 feet deep from which a person could climb out;
  - (c) A horizontal hole with no associated stopes, winzes or raises; or
  - (d) A high wall of an open pit.
2. Two points must be assigned to a dangerous condition consisting of:
  - (a) A vertical or near vertical hole 8 to 20 feet, inclusive, in depth which is not visible upon approach;
  - (b) Any vertical or near vertical hole 20 to 50 feet, inclusive, in depth; or
  - (c) Any inclined hole greater than 50 feet deep from which a person could climb out with no associated stopes, winzes or raises.
3. Three points must be assigned to a dangerous condition consisting of:
  - (a) Any vertical or near vertical hole 50 to 100 feet, inclusive, in depth; or
  - (b) Any horizontal or inclined hole with associated stopes, winzes or raises with less than a 20 -foot vertical opening.
4. Four points must be assigned to a dangerous condition consisting of:
  - (a) Any vertical or near vertical hole which is at least 100 feet deep and visible upon approach; or
  - (b) Any horizontal or inclined hole with associated stopes, winzes or raises with a vertical opening greater than 20 feet.
5. Five points must be assigned to a dangerous condition consisting of any vertical or near vertical hole which is at least 100 feet deep and not visible upon approach.

The administrator or his representative may assign a higher degree of danger to a dangerous condition if other factors such as loose ground or the presence of water increase the danger, but the degree of danger for a single dangerous condition may not be scored higher than five points.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.350 Dangerous condition causing fatality or injury. Any dangerous condition that has been the cause of a documented fatality or injury must be ranked as a high hazard, regardless of its numerical score.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.360 Rating of dangerous condition. Dangerous conditions must be rated as follows:

1. A dangerous condition with a total number of 2 or 3 points is a minimal hazard;
2. A dangerous condition with a total number of 4 or 5 points is a low hazard;
3. A dangerous condition with a total number of 6 or 7 points is a moderate hazard; and
4. A dangerous condition with a total number of at least 8 points is a high hazard.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.370 Posting warning sign. A dangerous condition regardless of its ranking must be posted with a warning sign mounted on an orange post. The sign must be posted within 30 days after the responsible person is notified by the county sheriff of the existence of the condition.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.380 Period after notification to secure dangerous condition. Upon notification of the existence of a dangerous condition, the responsible person shall:

1. Secure within 180 days a dangerous condition rated as a low hazard;
2. Secure within 120 days a dangerous condition rated as a moderate hazard; and
3. Secure within 60 days a dangerous condition rated as a high hazard, in the manner prescribed in NAC 513.390.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.390 Methods for securing dangerous condition. A dangerous condition must be secured by one or more of the following:

1. A barricade made of wood, metal or plastic, set in place in a solid manner with an orange warning sign attached.
2. A fence constructed to prevent a person or animal from accidentally exposing himself to the dangerous condition.
3. Permanently anchored seals constructed of material not subject to rapid decomposition and, if used to secure a vertical opening, strong enough to support the weight of any person or animal.
4. Backfilling so that no void spaces remain.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

#### FEE FOR FILING PLAN OF OPERATION

NAC 519A.634 Amount of fee. (NRS 519A.250) The amount of the fee that an operator must pay pursuant to subsection 1 of NRS 519A.250 is \$20 per acre or part of an acre.

(Added to NAC by Commission on Mineral Resources by R069 -99, eff. 8-19-99)

NAC 519A.635 Refund of portion of fees.

1. The division will refund to an operator a portion of the fees required by NRS 519A.250 according to the following schedule:

(a) For an amended plan:

(1) That reduces the number of acres or part of an acre to be disturbed from the original number of acres or part of an acre to be disturbed; and

(2) For which a fee has been paid to the division pursuant to NRS 519A.250,

the refund is \$15 for each acre or part of an acre removed from planned disturbance by the amendment.

(b) For a plan, there is no refund.

(c) For a notice, there is no refund.

2. An operator who wishes to receive a refund must send to the administrator a written request and a copy of the approved amended plan showing the reduction in acreage. Within 20 business days after receiving a valid written request for a refund and a copy of the amended plan, the administrator or his designee will request that the state controller issue a check to the operator in an amount calculated pursuant to paragraph (a) of subsection 1.

3. For the purposes of this section:

(a) "Notice" means a notice of intent to conduct activities that disturb the surface which is filed with the United States Bureau of Land Management or the United States Forest Service.

(b) "Operator" includes a person who is required by federal law to file a plan, an amended plan or a notice with the United States Bureau of Land Management or the United States Forest Service.

(c) "Plan" means a plan of operation filed with and approved by the United States Bureau of Land Management or the United States Forest Service.

(Added to NAC by Department of Minerals, eff. 10-9-90)

## Appendix D. Eagle Scout Projects

NEVADA EAGLE SCOUT AML SECURING PROGRAM					
	NAME OF EAGLE SCOUT	DATE(S) OF PROJECT	# SITES SECURED	# SITES REPAIRED	COUNTY ID NUMBERS OF SECURED SITES
1	David Loring	Sept. 12 & 26, 1992	8	0	WASHOE WA-10, 31, 32, 82, 109, 110, 112, 113
2	Tom Hawke	Oct. 24, 1992	5	0	WASHOE WA-103, 143 thru 146
		<b>1992 TOTAL</b>	<b>13</b>	<b>0</b>	
3	Chris Johnson	Sept. 4 & 11, 1993	5	0	WASHOE WA-114, 116 thru 119
4	Eric Bowman	Oct. 3, 23, & 24, 1993	7	0	CARSON CITY CC-13, 14, 27, 28, 31, 65, 69
		<b>1993 TOTAL</b>	<b>12</b>	<b>0</b>	
5	Josh Johnson	Nov. 12, 1994	4	0	CLARK CL-1407 thru 1409, 1425
		<b>1994 TOTAL</b>	<b>4</b>	<b>0</b>	
6	Nate Burnett	Aug. 10, 1996	7	0	WASHOE WA-210, 211, 220, 221, 227, 228, 232
7	Cory Miller	Dec. 14, 1996	6	0	WASHOE WA-212, 222 thru 226
		<b>1996 TOTAL</b>	<b>13</b>	<b>0</b>	
8	Tony Kopp	Jan. 31, 1998	9	0	CLARK CL-567, 940, 1338 thru 1343, 1386
9	Nathen Berger	July 18, 1998	4	0	CARSON CITY CC-39, 40, 48, 49
10	Jason Smith	Aug. 22, 1998	6	0	DOUGLAS DO-46 thru 48, 50, 99, 100
11	Danny Miller	Oct. 24, 1998	3	0	WASHOE WA-241, 253, 254
12	Logan Nordyke	Nov. 7 & Dec. 12, 1998	3	0	CARSON CITY CC-52, 54, 61
		<b>1998 TOTAL</b>	<b>25</b>	<b>0</b>	
13	James Smith	Jan. 17 & May 15, 1999	2	2	WASHOE WA-49, 256 + repairs to 57, 58
14	Daniel Murrell	April 10, 1999	7	0	CLARK CL-46 thru 51, 1434
15	Steven Scheetz	Sept. 25, 1999	6	0	DOUGLAS DO-51 thru 55, 131
		<b>1999 TOTAL</b>	<b>15</b>	<b>2</b>	
16	Jason Hayes/ Peter Peterson	Oct. 20 & 21, 2000	7	0	CLARK CL-688 thru 694
17	Glen Farnsworth	Dec. 1 & 2, 2000	7	0	WASHOE WA-280, 281, 287 thru 289, 295, 296
		<b>2000 TOTAL</b>	<b>14</b>	<b>0</b>	
18	Richard Dwyer	Jan. 13 & 14, 2001	10	2	CLARK CL-38, 39, 41 thru 43, 58, 59, 708, 709, 1471 + repairs to 35, 36
19	Colby Cole	February 24, 2001	6	6	CLARK CL-543, 544, 546, 547, 551, 1479 + repairs to 545, 548 thru 550, 552, 553
20	Blake Kalmes	April 7, 2001	7	1	CLARK CL-1464 thru 1467, 1469, 1470, 1480 + repairs to 1416
21	William Bunch	December 8, 2001	5	0	CLARK CL-1331 thru 1335 - sites previously secured very poorly
22	Shawn Holloman	July 14, 2001	6	0	LYON LY- 322 thru 327
23	Travis Jarland	Aug. 11, 2001	5	0	LYON LY-373, 592 thru 594, 597
		<b>2001 TOTAL</b>	<b>39</b>	<b>9</b>	
24	Beau Kalmes	Feb. 9, 2002	7	0	CLARK CL-1161 thru 1164, 1505 thru 1507
26	Travis Cummins	Jan. 21, 2002	9	0	LYON LY-279, 280, 299 thru 302, 679, 680, 681
27	Thomas Schwedhelm	June 29, 2002	8	0	LYON LY-234 thru 236, 239, 240, 645, 659, 660
28	Ben Stanphill	Nov. 2, 2002	11	0	LYON LY-227, 229 thru 233, 707 thru 711
		<b>2002 TOTAL</b>	<b>35</b>	<b>0</b>	
		<b>CURRENT GRAND TOTAL</b>	<b>170</b>	<b>11</b>	

\*NOTE: Project #25 is pending in 2003.